

What is claimed is:

1. An apparatus for loading an article from a first conveyor section onto a pallet situated on a second conveyor section, comprising:

a pusher mechanism for pushing the article from the first conveyor section toward the pallet on the second conveyor section; and

an extension fork assembly including;

a stationary transfer surface between said pusher mechanism and the second conveyor section configured to support the article as it is pushed by said pusher mechanism thereacross;

a number of elongated forks configured to support the article as it is pushed by said pusher mechanism thereacross; and

a drive mechanism connected to said number of forks and operable to move said number of forks between a retracted position adjacent said stationary transfer surface and an extended position adjacent the pallet on the second conveyor section.

2. The apparatus according to claim 1, wherein said stationary transfer surface includes a number of elongated beams extending between said pusher mechanism and the second conveyor section.

3. The apparatus according to claim 2, wherein each of said number of elongated beams includes a curved surface defining said stationary transfer surface.

4. The apparatus according to claim 2, wherein said extension fork assembly includes a first plurality of elongated beams and a second plurality of elongated forks interleaved with said first plurality of elongated beams.

5. The apparatus according to claim 4, wherein each of said number of elongated beams includes a curved surface defining said stationary transfer surface.

6. The apparatus according to claim 4, wherein each of said second plurality of elongated forks includes a curved surface configured to support the article as it is pushed by said pusher mechanism thereacross.

7. The apparatus according to claim 6, wherein said curved surface of each of said second plurality of elongated forks is situated at or below said stationary transfer surface.

8. The apparatus according to claim 1, wherein said extension fork assembly includes a roller assembly supporting a free end of each of said number of elongated forks, and said drive

mechanism is connected to each of said number of forks at an opposite end thereof.

9. The apparatus according to claim 8, wherein said extension fork assembly includes:

at least one guide channel disposed between said pusher mechanism and the second conveyor section; and

at least one trolley assembly connecting said opposite end of said number of elongated forks to said drive mechanism and translatably disposed within a corresponding guide channel.

10. The apparatus according to claim 9, wherein said at least one trolley assembly includes a substantially vertical roller and a substantially horizontal roller arranged for rolling engagement with said corresponding guide channel.

11. The apparatus according to claim 1, wherein said drive mechanism includes:

at least one lead screw;

a drive nut threadedly engaged on said lead screw and connected to said number of forks; and

a motor operably coupled to said lead screw for rotating said at least one lead screw, whereby rotation of said lead screw causes said drive nut to traverse the length of said lead screw to move said number of elongated forks between said retracted and extended positions.

12. The apparatus according to claim 11, wherein said drive mechanism includes;

two lead screws disposed apart from each other in parallel arrangement and each operably coupled to said motor; and

two drive nuts, one each threadedly engaged with a corresponding one of said two lead screws, each of said drive nuts connected to said number of forks.

13. The apparatus according to claim 1, wherein each of said number of elongated forks includes a tapered free end.

14. A system for loading an article onto a pallet, comprising:

a first conveyor section initially transporting the article;

a second conveyor section carrying the pallet; and

a transfer apparatus disposed between said first conveyor section and said second conveyor section, said transfer apparatus including;

a pusher mechanism for pushing the article from said first conveyor section toward the pallet on said second conveyor section; and

an extension fork assembly including;

a stationary transfer surface between said pusher mechanism and said second conveyor section configured to support the article as it is pushed by said pusher mechanism thereacross;

a number of elongated forks configured to support the article as it is pushed by said pusher mechanism thereacross; and

a drive mechanism connected to said number of forks and operable to move said number of forks between a retracted position adjacent said stationary transfer surface and an extended position over said second conveyor section adjacent the pallet carried thereon.

15. A method for loading an article from a first conveyor section onto a pallet situated on a second conveyor section, comprising the steps of:

moving the article onto a apparatus disposed between the first and second conveyor sections;

extending a number of elongated forks from the apparatus over the pallet situated on the second conveyor section;

sliding the article along a stationary transfer surface of the apparatus;

further sliding the article along the extended elongated forks until the article is situated above the pallet; and

retracting the number of elongated forks from between the article and the pallet while holding the article in position over the pallet.